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Wind power storage to produce wind clean fuels and to stabilize the grid

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Wind power presently supplies a tiny fraction of US energy. The main problem is the variability of wind, and the lack of practical energy storage means. Our goal is to make massive use of wind power viable by storing wind electric energy as heat in underground unconventional oil resources, converting these resources to liquid fuels. This can stabilize the electric grid by adjusting the heating load to track variations in wind, according to our patent No. 7484561. Costs can be reduced by using off-peak power, especially when the wind wanes. Adjusting this non-wind load to track electric demand can further help to stabilize the grid. With fluctuations removed, wind can become a significant part of energy supply, which is a long-term goal for the US. In the past, we have shown that *in situ* radio-frequency heating works in small pilot tests to store energy as heat, which in turn liberates oil from tar sands and oil shale. This *in situ* process uses very little water, and avoids surface disruption. Wide adoption of *in situ* RF technology when combined with wind power storage could extract wind-clean fuels with little CO₂ emission, as well as replacing our foreign oil imports. Eliminating combustion as a source of extraction energy would reduce by one third the CO₂ associated with motor fuel use. High cost sequestering of CO₂ would not be needed. Wind clean fuel production is sustainable from the 2.3 trillion barrel US oil shale deposits for over 200 years. The wind-clean fuel can use existing infrastructure, such as pipelines and service stations; existing automobiles can use it without requiring any modifications.